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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/694,564
Filing Date: October 27, 2003
Appellant(s): LUO ET AL.

Dan C. Hu
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/12/07 appealing from the Office action mailed 10/12/06.

(1) Real Party in Interest

A statement identifying the real party in interest in contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,829,600 Gu 12-2004

- B. Walter "Nested Transactions With Mulitple Commit Points: An Approach to the Structuring of Advanced Database Application" (Aug. 1984) p.161-168
- MathLeague, "Introduction to Algebra" MathLeague (Mar. 2001) p.1-10

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 10-12, 14-17, 22-26, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,829,600 (Gu et al.) in view of "Nested Transactions with Multiple Commit Points: An approach to the Structuring of Advanced Database Applications" (Walter), further in view of "Introduction to Algebra" (MathLeague).

For **Claim 1**, Gu teaches: "A method comprising:

- identifying statements in a particular one of the transactions that specify modification operations that are commutative and associative; [Gu, col. 1, lines 49-67]

- combining the identified statements into one statement; [Gu, col. 1, lines 30-37] and
- submitting the one statement to the database system" [Gu, col. 1, lines 28-42].
- Gu discloses the above limitations but does not expressly teach:
- "establishing multiple sessions with a database system, each session associated with at least one transaction;
- identifying transactions that operate on the same set of one or more tuples;
- re-allocating transactions between or among the sessions such that the identified transactions that operate on the same set of one or more tuples are allocated to one of the sessions."

With respect to Claim 1, an analogous art, Walter, teaches:

- "establishing multiple sessions with a database system, each session associated with at least one transaction" [Walter, pg. 168, paragraph under C)].

With respect to Claim 1, an analogous art, MathLeague, teaches:

- "identifying transactions that operate on the same set of one or more tuples; [MathLeague, pg. 7, Simplification by Multiplication example with Walter, pg. 168, paragraph under C) with Gu, col. 1, lines 25-37 with Gu, col. 1, lines 49-67]
- re-allocating transactions between or among the sessions such that the identified transactions that operate on the same set of one or more tuples are allocated to one of the sessions" [MathLeague, pg. 7, Simplification by Multiplication example with Walter, pg. 168, paragraph under C) with Gu, col. 1, lines 25-37 with Gu, col. 1, lines 49-67].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Walter and MathLeague with Gu because the inventions are directed towards modifying data within a period of time or a certain time.

Walter's and MathLeague's invention would have been expected to successfully work well with Gu's invention because the inventions use data manipulation operations. Gu discloses a merge delete statement for database operations comprising committing operations and combining statements into one, however Gu does not expressly disclose sessions as broad enough to map to transactions, identifying alike transactions, re-allocating transactions or grouping transactions. Walter discloses nested transactions with multiple commit points comprising committing child transactions upon committing the parent transaction (grouping all child transactions into the parent when the parent commits). MathLeague discloses an introduction to algebra comprising simplifying equations on both sides of the equation to find the value of the variable that satisfies the equation.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the transactions from Walter, the grouping of similar operations on the same group of data from MathLeague and install them into the invention of Gu, thereby offering the obvious advantage of simplifying transactions/sessions on databases of Gu and allowing independent transaction updating of the database.

As mapped, the transactions of Walter are the sessions in the claim. Also, MathLeague, in the cited section, multiplies both sides of an equation by 12 to simplify the equation and solve for the variable. As this prior art is combined with the other arts,

the multiplication of 12 on the left hand side of the equation is one transaction while the multiplication of 12 on the right hand side is a second transaction. These transactions are grouped together in Walter as being in the same commit scope so both sides would be modified on commit, thus solving/simplifying transactions like the cited transaction of Gu.

Claim 2 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, wherein identifying the statements comprises identifying Structured Query Language (SQL) statements" [Gu, col. 1, lines 30-37].

Claim 3 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, wherein combining the identified statements is performed prior to submitting the one statement to the database system" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8].

Claim 4 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, further comprising grouping plural transactions into the first transaction" [Walter, pg. 168, paragraph under C)].

Claim 10 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 1, wherein identifying the statements comprises identifying statements <t, b_i > through <t, b_m >, m being greater than 1, where t represents a set of one or more tuples, and b_i through b_m represent respective modification operations on the set of one or more tuples, [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67] and

- wherein combining the identified statements comprises combining the identified statements into statement <t, c>, where c represents an aggregation of b_i through b_m" [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67].

Claim 11 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 10, wherein combining the identified statements comprises combining the identified statements into statement <t, c>, where c represents an addition of b_i through b_m" [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67].

Claim 12 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The method of claim 10, wherein combining the identified statements comprises combining the identified statements into statement <t, c>, where c represents a multiplication of b_i through b_m" [MathLeague, pg. 7, Simplification by Multiplication example with Gu, col. 1, lines 55-67].

Claim 14 encompasses substantially the same scope of the invention as that of Claims 11 or 12 respectfully, in addition to an article and some instructions for performing the method steps of Claims 11 or 12, respectfully. Therefore, Claim 14 is rejected for the same reasons as stated above with respect to Claims 11 or 12, respectfully.

Claims 15-17 encompass substantially the same scope of the invention as that of Claims 2-4 respectfully, in addition to an article and some instructions for performing

the method steps of Claims 2-4, respectfully. Therefore, Claims 15-17 are rejected for the same reasons as stated above with respect to Claims 2-4, respectfully.

Claim 22 encompasses substantially the same scope of the invention as that of Claim 1, in addition to a system and some interface, processor(s), and software utility for performing the method steps of Claim 1. Therefore, Claim 22 is rejected for the same reasons as stated above with respect to Claim 1. Additionally, Claim 22 recites "an interface to receive first queries from a client system," which is taught in Gu, col. 8, lines 52-64 with Gu, Fig. 3, "one or more processors" which is taught in Gu, col. 7, lines 5-10 with Gu, Fig. 3, and "a software utility executable on the one ore more processors to" which is taught in Gu, col. 7, lines 10-15 with Gu, Fig. 3.

Claim 23 encompasses substantially the same scope of the invention as that of Claim 2, in addition to a system and some interface and controller for performing the method steps of Claim 2. Therefore, Claim 23 is rejected for the same reasons as stated above with respect to Claim 2.

Claim 24 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The system of claim 22, wherein the controller is adapted to send the second query to a database engine of the database system" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8].

Claim 25 can be mapped to Gu (as modified by Walter and MathLeague) as follows: "The system of claim 24, wherein the controller is adapted to group the identified first queries prior to submitting the second query to the database engine" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8].

Claim 26 encompasses substantially the same scope of the invention as that of Claim 4, in addition to a system and some controller for performing the method steps of Claim 4. Therefore, Claim 26 is rejected for the same reasons as stated above with respect to Claim 4.

Claims 28-30 encompass substantially the same scope of the invention as that of Claims 10-12, respectfully, in addition to a system and some interface and controller for performing the method steps of Claims 10-12, respectfully. Therefore, Claims 28-30 are rejected for the same reasons as stated above with respect to Claims 10-12, respectfully.

Claims 8, 9, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,829,600 (Gu et al.) in view of "Nested Transactions with Multiple Commit Points: An approach to the Structuring of Advanced Database Applications" (Walter) in view of "Introduction to Algebra" (MathLeague), further in view of "Lesson on Order of Operations With Exponents" (MathGoodies).

For **Claim 8**, Gu (as modified by Walter and MathLeague) teaches: "The method of claim 1, further comprising."

Gu (as modified by Walter and MathLeague) discloses the above limitation but does not expressly teach: "switching an order of statements in the particular transaction to place the identified statements adjacent to each other."

With respect to Claim 8, an analogous art, MathGoodies, teaches: "switching an order of statements in the particular transaction to place the identified statements adjacent to each other" [MathGoodies, pg. 2, Example 3 with Gu, col. 1, lines 55-67].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine MathGoodies with Gu (as modified by Walter and MathLeague) because both inventions are directed towards modifying data using math.

MathGoodies's invention would have been expected to successfully work well with Gu (as modified by Walter and MathLeague)'s invention because both inventions use math to determine an answer. Gu (as modified by Walter and MathLeague) discloses a merge delete statement for database operations comprising an update statement that uses math in updating variables/tuples, however Gu (as modified by Walter and MathLeague) does not expressly disclose reordering statements within transactions. MathGoodies discloses simplifying mathematical equations comprising solving for the answer of a mathematical problem.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the simplification of mathematical equations from MathGoodies and install it into the invention of Gu (as modified by Walter and MathLeague), thereby offering the obvious advantage maintaining coherency when using math in transactions. In this combination, the statements of the claim are the operations of MathGoodies, which are the modification operations of Gu (as modified by Walter and MathLeague). As taught in mathematics, some operations, such as multiplication, are done prior to other operations, such as addition. This is reordering operations/statements.

Claim 9 can be mapped to Gu (as modified by Walter, MathLeague, and MathGoodies) as follows: "The method of claim 8, further comprising determining whether data dependency exists between or among the identified statements prior to switching the order of the identified statements" [MathGoodies, pg. 2, Example 3, the order in which operations are done in math define the dependencies].

Claim 20 encompasses substantially the same scope of the invention as that of Claim 8, in addition to an article and some instructions for performing the method steps of Claim 8. Therefore, Claim 20 is rejected for the same reasons as stated above with respect to Claim 8.

Claims 5-7, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,829,600 (Gu et al.) in view of "Nested Transactions with Multiple Commit Points: An approach to the Structuring of Advanced Database Applications" (Walter), further in view of "Introduction to Algebra" (MathLeague), further in view of U.S. Patent No. 6,714,938 (Avadhanam et al.).

For **Claim 5**, Gu (as modified by Walter and MathLeague) teaches: "The method of claim 4."

Gu (as modified by Walter and MathLeague) discloses the above limitation but does not expressly teach: "wherein establishing the multiple sessions, identify the transactions, re-allocating the transaction, identifying the statements, combining the identified statements, submitting the one statement, and grouping the plural

transactions are performed by a module separate from a database engine of the database system."

With respect to Claim 5, an analogous art, Avadhanam, teaches: "wherein establishing the multiple sessions, identify the transactions, re-allocating the transaction, identifying the statements, combining the identified statements, submitting the one statement, and grouping the plural transactions are performed by a module separate from a database engine of the database system" [Avadhanam, col. 7, lines 11-24].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Avadhanam with Gu (as modified by Walter and MathLeague) because both inventions are directed towards using and needing to analyze queries.

Avadhanam's invention would have been expected to successfully work well with Gu (as modified by Walter and MathLeague)'s invention because both inventions use a database issuing queries. Gu (as modified by Walter and MathLeague) discloses a merge delete statement for database operations comprising a database server, however Gu (as modified by Walter and MathLeague) does not expressly disclose that this database server explicitly has a query optimizer that must analyze the query (although this is necessary) or that this optimizer is a separate module from a database engine of the database system. Avadhanam discloses query planning using a maxdiff histogram comprising a query optimizer that analyses queries and is, by definition, separate from a database engine of the database system.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the query optimizer from Avadhanam and install it into the invention of Gu (as modified by Walter and MathLeague), thereby offering the obvious advantage of determining a best execution plan for a submitted query.

For **Claim 6**, Gu teaches: "The method of claim 1."

Gu discloses the above limitation but does not expressly teach: "wherein establishing the multiple sessions, identifying the transactions, re-allocating the transactions, identifying the statements, combining the identified statements, and submitting the one statement are performed by a module separate from a database engine of the database system."

With respect to Claim 6, an analogous art, Avadhanam, teaches: "wherein establishing the multiple sessions, identifying the transactions, re-allocating the transactions, identifying the statements, combining the identified statements, and submitting the one statement are performed by a module separate from a database engine of the database system" [Avadhanam, col. 7, lines 11-24].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Avadhanam with Gu because both inventions are directed towards using and needing to analyze queries.

Avadhanam's invention would have been expected to successfully work well with Gu's invention because both inventions use database issuing queries. Gu discloses a merge delete statement for database operations comprising a database server, however Gu does not expressly disclose that this database server explicitly has a query

optimizer that must analyze the query (although this is necessary) or that this optimizer is a separate module from a database engine of the database system. Avadhanam discloses query planning using a maxdiff histogram comprising a query optimizer that analyses queries and is, by definition, separate from a database engine of the database system.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the query optimizer from Avadhanam and install it into the inventoin of Gu, thereby offering the obvious advantage of determining a best execution plan for a submitted query.

Claim 7 can be mapped to Gu (as modified by Avadhanam) as follows: "The method of claim 6, wherein identifying the statements, combining the identified statements, and submitting the one statement are performed by the module without first accessing data in relational tables" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8 with Avadhanam, col. 7, lines 11-24].

For **Claim 18**, Gu (as modified by Walter and MathLeague) teaches: "The article of claim 17."

Gu (as modified by Walter and MathLeague) discloses the above limitation but does not expressly teach: "wherein the controller is separate from a database engine of the database system."

With respect to Claim 18, an analogous art, Avadhanam, teaches: "wherein the controller is separate from a database engine of the database system" [Avadhanam, col. 7, lines 11-24].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Avadhanam with Gu (as modified by Walter and MathLeague) because both inventions are directed towards using and needing to analyze queries.

Avadhanam's invention would have been expected to successfully work well with Gu (as modified by Walter and MathLeague)'s invention because both inventions use a database issuing queries. Gu (as modified by Walter and MathLeague) discloses a merge delete statement for database operations comprising a database server, however Gu (as modified by Walter and MathLeague) does not expressly disclose that this database server explicitly has a query optimizer that must analyze the query (although this is necessary) or that this optimizer is a separate module from a database engine of the database system. Avadhanam discloses query planning using a maxdiff histogram comprising a query optimizer that analyses queries and is, by definition, separate from a database engine of the database system.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the query optimizer from Avadhanam and install it into the invention of Gu (as modified by Walter and MathLeague), thereby offering the obvious advantage of determining a best execution plan for a submitted query.

Claim 19 can be mapped to Gu (as modified by Walter, MathLeague, and Avadhanam) as follows: "The article of claim 18, wherein the identifying, combining, and submitting are performed by the controller without first accessing data in relational tables stored in the database system" [Gu, col. 1, lines 30-37 with Gu, cols. 2-3, lines 63-8 with Avadhanam, col. 7, lines 11-24].

(10) Response to Argument

As to the appellant's arguments with respect to Claims 1 and 22 for the prior art(s) allegedly not teaching anything "to do with the subject matter recited in claim 1, namely identifying transactions that operate on the same set of one or more tuples, and re-allocating transactions between or among session with the database system such that the identified transactions that operate on the same set of one or more tuples is allocated to one of the sessions," the examiner respectfully disagrees. From the appellants arguments it appears that the appellant does not understand how the references were and are combined. MathLeague, pg. 7, Simplification by Multiplication example with Walter, pg. 168, paragraph under C) with Gu, col. 1, lines 25-37 with Gu, col. 1, lines 49-67 were used in combination to rejection the argued subject matter. As mapped, the transactions of Walter are the sessions in the claim. Also, MathLeague, in the cited section, multiplies both sides of an equation by 12 to simplify the equation and solve for the variable. As this prior art is combined with the other arts, the multiplication of 12 on the left hand side of the equation is one transaction while the multiplication of 12 on the right hand side is a second transaction. These transactions are grouped together in Walter as being in the same commit scope so both sides would be modified on commit (to maintain the equivalence in the equation), thus solving/simplifying transactions like the cited transaction of Gu. With this in mind, the "identifying transactions that operate on the same set of one or more tuples" limitation is seen as identifying transactions that operation on the same equation (including variables and numbers (set of one or more tuples)). Additionally, "re-allocating transactions between

or among the sessions such that the identified transactions that operate on the same set of one or more tuples are allocated to one of the sessions" is seen as combining the sequence of transactions into a single atomic statement (like I Gu, col. 1, lines 25-37). Since the equivalence in the equation must be upheld, transactions in Walter, and MathLeague must be moved like in Gu so they can be committed in a single atomic statement.

Another way of looking at how the applied prior art teaches the claimed invention is shown here for an alternative understanding. On commit of a parent transaction with children transactions in Walter, any operations/transactions (dealing with the same variables/numbers) in Walter are grouped/re-allocated together into one transaction (as Gu teaches combining commands into one atomic statement) according to the simplification idea/technique/procedure in MathLeague.

For instance, consider the following session with corresponding transactions

- Session1:
  - Transaction1 n=n+4 (increments the value of n by 4)
  - Transaction2 n=n-2
  - Transaction3 n=n-6
  - Transaction4 n=n+14

According to MathLeague's simplification of problems, it would be obvious to simplify/group the above transactions1-4 into a single transaction n=n+10 (like Gu teaches a combining of different commands into one atomic statement) since doing the sequence of transactions results in n=n+10.

The Claims state that these transactions can be reallocated/simplified "between or among sessions." This is where Walter comes in.

Considering a different but yet similar scenario:

- Session1 (parent):
    - Transaction1.1 n=n+4
    - Transaction1.2 n=n-2
        - Session2 (child)
            - Transaction2.1 n=n-6
            - Transaction2.2 n=n+14

According to Walter, when the parent session1 commits, the child session2 will also commit. So, upon the database seeing that the parent and child both modify the same number/variable (seeing that simplification can occur), the database will simplify the transactions/sessions into one statement n=n+10 (Gu) like the above example according to the teachings/simplification ideas of MathLeague. The session/transaction structure of above example is well within the understanding contained within the references since, for instance, solving the parent problem of X/12=5 can be broken down into several child simplification steps/transactions/sessions as seen in MathLeague, p 7 (for instance sessionX would be a step/transaction of multiplying the left side by 12, and another step/transaction would be multiplying the right side by 12, where committing sessionX would do both steps/transactions atomically to preserve equation equality/database coherency).

As such, even though MathLeage doesn't explicitly have anything to do with session established with a database system, the idea of simplifying a math problem of a sequence of steps can easily apply to the simplifying of transactions of database operations. In applying this idea to a database and considering the other prior arts, MathLeague can been seen as identifying an re-allocating transactions among sessions with the database system

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, suggestion, or motivation to combine/modify the teachings is found in the references themselves. Gu contains a motivation in that INSERT and UPDATE operations are modification operations, much like the operations done in MathLeague. Additionally, Gu teaches the requirement of issuing atomic statements, which is much like the commitment of transactions in Walter. The advantages of combining the references as stated can be found above in the reasoning to combine the references directly after the rejected Claim 1. Specifically, combining the prior arts offers the obvious advantage of simplifying transactions/sessions on databases of Gu and allowing independent transaction updating of the database (Pg 1 of Walter, col. 2, second full paragraph).

In response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

As to the appellant's arguments with respect to Claim 10 for the prior art(s) allegedly not teaching "identifying statements <t, b_i > through <t, b_m >, m being greater than 1, where t represents a set of one or more tuples, and b_i through b_m represent respective modification operations on the set of one or more tuples, and wherein combining the identified statements comprises combining the identified statements into statement <t, c>, where c represents an aggregation of b_i through b_m," the examiner respectfully disagrees. As identified above, the problem of the simplification of a math problems is the same idea of the simplification of transactions in a database when a parent transaction with its children are committed at once. Therefore, in order to simplify the transactions, transactions occurring on a set of one or more tuples must be identified so that the simplification is correct (so that transactions on a same value/tuple are combined together to make an equivalence). The resultant simplified problem is what replaces all the steps of simplifying to that point. This resultant problem (like in MathLeague, p. 7 "x=60") is an aggregation of all the simplification operations (like in

MathLeague, p. 7 of multiplying by 12 on both sides of the equation). This resultant problem/transaction is what is applied to the database art of simplifying transactions so that a number of transactions operating on the same value/tuple are replaced by a simplified transaction (aggregated from the transactions it replaces).

Claim 14's limitations are similar to that of Claim 10's except that Claim 14 adds that the modification operations are commutative and associative and that the aggregation is one of addition and multiplication. As to the appellant's arguments with respect to Claim 14 for the prior art(s) allegedly not teaching that the modification operations are commutative and associative and that the aggregation being one of addition and multiplication the examiner respectfully disagrees. MathLeague shows simplification operations relating the multiplication. This appears to be enough to show that the aggregations above are based on one of multiplication and addition. Multiplication operations are known in math as being an operation that is commutative and associative. As review for any interested party, the commutative property for mathematics and, specifically, multiplication is shown in the equivalence of 9 X 15 = 15 X 9 and the associative property relating to multiplication is shown in the equivalence of (9 X 3) X 15 = 9 X (3 X 15). Since MathLeague shows simplification operations that use multiplication, this shows that simplification of database operations can use aggregations of multiplication that are by definition commutative and associative.

The other claims argued merely because of a dependency on a previously argued claim(s) in the appeal brief presented to the examiner are moot in view of the

examiner's interpretation of the claims and art and are still considered rejected based on their respective rejections from a prior Office action (parts of recited again above).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Brent Stace

Conferees:

Apu Mofiz

APU MOFIZ
SUPERVISORY PATENT EXAMINER

Eddie Lee

EDDIE C. LEE
SUPERVISORY PATENT EXAMINER